

LXV.—*A new Freshwater Amphipod from New Zealand.*  
By CHARLES CHILTON, M.A., D.Sc., F.L.S.

[Plate XVIII.]

THE Amphipod described in this paper was first found some years ago in a mountain stream on the slopes of Mount Mihiwaka, near Port Chalmers, New Zealand, at a height of about 1000 feet above sea-level. Afterwards I found it in numerous other streams in the neighbourhood, and also at Waitati, at various heights from about 200 feet above sea-level up to an altitude of 1500 feet. Since then Mr. G. M. Thomson tells me that his sons have collected it for him from a small dam at a hillside stream at Hopehill, Taieri, from spongy moss near the top of Mount Cargill, 2200 feet, and from similar ground on the top of Swampy Hill, 2400 feet.

Further investigation will probably show that it is widely distributed in similar situations in the eastern parts of Otago and perhaps elsewhere.

I have usually found it in the damp moss &c. on stones and boulders over which water trickles at the side of the stream, and often in association with the freshwater Isopod *Idotea lacustris*, var.  $\beta^*$ .

The occurrence of this Amphipod was briefly referred to in my paper on the "Subterranean Crustacea of New Zealand" †; but no description has hitherto been published. I refer it with some slight hesitation to the genus *Hyalella*, numerous species of which are found in the fresh waters of both North and South America.

*Hyalella mihiwaka*, sp. n.  
(Pl. XVIII. figs. 1-12.)

*Specific Description.*—*Male* (fig. 1). Body stout and broad, especially in the pereion, smooth. Eyes small, round. Side-plates of the first four segments of the pereion much deeper than their respective segments, the fourth much broader than any of the preceding. First three segments of pleon with the lower posterior angles nearly right-angled, very slightly produced backwards. Telson simple, fairly large, convex, subrectangular, posterior angles rounded, hind margin very slightly produced in the middle.

\* See 'Transactions New Zealand Institute,' xxiv. p. 263.

† Trans. Linn. Soc. 2nd ser., Zool. vol. vi. part 2, p. 254.

Antennæ subequal; peduncle of upper antenna as long as the flagellum, reaching to the middle of the last joint of the peduncle of the lower, which is slightly longer than its flagellum. First gnathopoda with the carpus as long as the propodos, its posterior margin bearing a regular row of about fifteen long setæ, which increase in length distally; propodos subrectangular, widening distally, palm nearly transverse, well defined by a knob formed by a projection of the posterior margin. Second gnathopoda with the ischium, meros, and carpus all small, subequal, the carpus not produced into a lobe; the propodos very large, about as long as the basos, rectangular, attachment to carpus narrow, both margins straight and free from setæ; palm nearly transverse, defined as in the first gnathopod, slightly convex, bordered by one or two irregular rows of short setæ of varying lengths; dactylos stout, with a slight projection on the inner margin near the base. Last three pairs of pereopoda with the basos very broad, its posterior margin very convex, minutely serrate. Third uropoda very minute, peduncle indistinct, apparently fused with its segment, the single ramus pear-shaped and bearing a few minute setæ.

*Female.* Differs from the male in the second gnathopoda, which are like the first in shape and size, but have the carpus shorter, subtriangular, with the row of setæ more oblique and containing only about five or six setæ.

*Colour.* Greyish or nearly white.

*Size.* Largest specimens about  $\frac{1}{2}$  of an inch (5 millim.).

*Habitat.* Mountain streams near Port Chalmers, up to about 1500 feet above sea-level (*Chilton*). In hillside stream at Rast Taieri; from spongy moss at top of Mount Cargill, 2200 feet, and on Swampy Hill, 2400 feet (*G. M. Thomson*).

*Remarks.* This species appears to be very distinct and easily distinguished from the other species of the same genus of which I have descriptions at my command. The chief distinguishing points seem to be:—

- (1) The body is stout and broad and the side-plates deep.
- (2) The lower antennæ are only slightly longer than the upper; usually they are much longer.
- (3) The gnathopoda are very characteristic, especially in the regular row of setæ on the carpus of the first and in the very large rectangular propodos of the second. In neither is the carpus produced into a lobe lying alongside the base of the propodos.
- (4) The third uropoda appear more rudimentary than in most of the species.

In addition to the description given above, I add the

following particulars regarding some of the appendages, those appendages which are not mentioned being understood to present no features calling for special mention beyond the description already given.

*Upper lip* firm and strong; distal margin regularly rounded and nearly semicircular, covered with a fur of fine setæ converging towards the centre.

*First maxilla.* Outer lobe strong, with the usual strong denticulate setæ at the end; inner lobe small and very slender, with two long plumose setæ at the extremity. On the outer margin of the outer lobe is a slight notch, indicating the position of the rudimentary "palp," but I can find no trace of the palp itself.

*Maxillipedes* (fig. 4) fairly large and well developed. The inner lobe is long, reaching as far as the end of the outer lobe; it is oblong, and the extremity, which is slightly oblique, bears, in addition to some fine setæ, three rather blunt teeth, of which the innermost one is the smallest and the outermost one the largest; the outer lobe has the inner margin nearly straight and fringed with fine setæ, the outer margin curved and without setæ except at the extremity; the meros has one or two setæ at the extremity on each margin; the carpus is broad, being produced on the inside into a flat expansion densely fringed with fine setæ; propodos much narrower than the carpus, slightly curved, margins parallel, the extremity bearing numerous fine setæ; the dactylos small, partially imbedded in the propodos, the extremity bears several setæ, one of which is much longer and stronger than the others.

*First gnathopod* (fig 5). The general form will be sufficiently understood from the figure and the description already given. The well-marked row of long setæ on the carpus is on the outer portion of the posterior margin, which is slightly produced into a flat expansion; a few setæ are irregularly placed on the inner surface of the propodos.

*Second gnathopod.* The difference in the form and size of this appendage in the two sexes is very marked. Fig. 7, which represents the inner side of the appendage in the female, shows that there is a small tuft of two setæ present on the inner surface of the carpus in addition to the row of setæ on the posterior margin.

*Uropoda* (figs. 9, 10, 11). The first and second pairs of uropoda are well developed and present no remarkable features; the third are rudimentary and very minute, the only part that can be easily made out being that shown in fig. 11, which appears to represent the single ramus; it is

pear-shaped, and bears on the outer margin a small tuft of fine setæ at the centre and another at the extremity; the inner margin is without setæ; the peduncle appears to have coalesced with the sixth segment of the pleon.

#### EXPLANATION OF PLATE XVIII.

##### *Hyaella mihiwaka.*

- Fig.* 1. Side view of male,  $\times 19$ .  
*Fig.* 2. Upper antenna,  $\times 45$ .  
*Fig.* 3. Lower antenna,  $\times 45$ .  
*Fig.* 4. Maxillipedes,  $\times 45$ . 4*a.* Inner lobe,  $\times 120$ . 4*b.* Extremity,  $\times 120$ .  
*Fig.* 5. First gnathopod,  $\times 45$ .  
*Fig.* 6. Second gnathopod of male,  $\times 45$ .  
*Fig.* 7. Second gnathopod of female,  $\times 45$ .  
*Fig.* 8. Pleon,  $\times 45$ .  
*Fig.* 9. First uropod,  $\times 45$ .  
*Fig.* 10. Second uropod,  $\times 45$ .  
*Fig.* 11. Third uropod,  $\times 45$ .  
*Fig.* 12. Telson,  $\times 85$ .

LXVI. — *New Coccidæ from Mexico.* By T. D. A. COCKERELL, Entomologist of the New Mexico Agricultural Experiment Station.

THE Coccidæ herein described were collected in Mexico in 1897 by Mr. A. Koebele and Prof. C. H. T. Townsend, and sent to the U.S. Department of Agriculture. I am much indebted to Dr. L. O. Howard, the Entomologist of the Department, for the opportunity of studying and describing these insects, which prove to be many of them of extreme interest.

It is proper to state that Mr. Koebele's expedition was made at the expense of the government of the Sandwich Islands, while Prof. Townsend's collecting was done in the service of the United States.

#### POROCOCCUS, gen. nov.

Allied to *Solenophora*. Female with antennæ and legs. Antennæ 6-segmented, the last segment long. Caudal tubercles not much produced. Anal ring with 6 bristles. Insect contained in a black scale, which has an orifice at the hind end. Embryonic larva with rows of spines as in *Eriococcus* &c.

Type *P. tinctorius*.